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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,459	07/29/2003	Guogen Zhang	SVL920030024US1	7326

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EXAMINER

ADAMS, CHARLES D

ART UNIT	PAPER NUMBER
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2164

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/629,459	Applicant(s) ZHANG ET AL.	
	Examiner Charles D. Adams	Art Unit 2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7-29-03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 5, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "smallest" in claims 2, 5, and 8 is a relative term which renders the claim indefinite. The term "smallest" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. No scale is provided to quantify one particular grouping set as the "smallest" of those available on a previous level. No explanation is given as to what constitutes one grouping set as being 'smaller' than another.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by

Cochrane et al. (US Patent 5,963,936).

As to claim 1, Cochrane et al. teaches a method of optimizing a query in a computer system, the query being performed by the computer system to retrieve data from a database stored on the computer system, the method comprising:

(a) during compilation of the query, maintaining a GROUP BY clause with one or more GROUPING SETS, ROLLUP, or CUBE operations in its original form until after query rewrite (see column 7, lines 26-30, and column 7, lines 44-48. The “query parser lexes, parses, and semantically checks a query, producing an internal representation that is rewritten”. Therefore, the query is kept in its original form until after the query rewrite); and

(b) translating the GROUP BY clause with the GROUPING SETS, ROLLUP or CUBE operations into a plurality of levels having one or more grouping sets (see 8:26-42, Figure 7).

As to claim 2, Cochrane et al. teaches further comprising:

(1) after compilation of the query, dynamically determining a grouping sets sequence for the GROUP BY clause with the GROUPING SETS, ROLLUP or CUBE operations based on intermediate grouping sets, in order to optimize the grouping sets sequence (see 8:26-42, Figure 7).

(2) optimizing execution of the grouping sets sequence by selecting a smallest grouping set from a previous one of the levels as an input to a grouping set on a next one of the levels (see 11:43-47. The GROUP BYs “are stacked from greatest to least

cardinality". There is only one grouping set per level. It is inherent, then, that the chosen grouping set sequence from a previous one of the levels will be the smallest one on its level).

As to claim 3, Cochrane et al. teaches further comprising performing a UNION ALL operation on the grouping sets (see 11:47-49 and Figure 7. "The base group by and all the GROUP BYs for ROLLUP1 are unioned together. If all of the GROUP BYs are unioned together, then it is functionally equivalent to a UNION ALL").

As to claim 4, Cochrane et al. teaches:

- (a) a computer system (see 6:63-65);
- (b) logic, performed by the computer system, for

(1) during compilation of the query, maintaining a GROUP BY clause with one or more GROUPING SETS, ROLLUP or CUBE operations in its original form until after query rewrite (see column 7, lines 26-30, and column 7, lines 44-48.

The "query parser lexes, parses, and semantically checks a query, producing an internal representation that is rewritten". Therefore, the query is kept in its original form until after the query rewrite); and

(2) translating the GROUP BY clause with the GROUPING SETS, ROLLUP or CUBE operations into a plurality of levels having one or more grouping sets (see 8:26-42, Figure 7).

As to claim 5, see the argument in regards to claim 2 above.

As to claim 6, see the argument in regards to claim 3 above.

As to claim 7, Cochrane et al. teaches an article of manufacture embodying logic for performing a method for optimizing a query, the query being performed by a computer system to retrieve data from a database stored in a data storage device coupled to the computer system (see 6:63 - 7:8), the method comprising:

(a) during compilation of the query, maintaining a GROUP BY clause with one or more GROUPING SETS, ROLLUP or CUBE operations in its original form until after query rewrite (see column 7, lines 26-30, and column 7, lines 44-48. The “query parser lexes, parses, and semantically checks a query, producing an internal representation that is rewritten”. Therefore, the query is kept in its original form until after the query rewrite); and

(b) translating the GROUP BY clause with the GROUPING SETS, ROLLUP or CUBE operations into a plurality of levels having one or more grouping sets (see 8:26-42, Figure 7).

As to claim 8, see the argument in regards to claim 2 above.

As to claim 9, see the argument in regards to claim 3 above.

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Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Adams whose telephone number is (571) 272-3938. The examiner can normally be reached on 8:30 AM - 5:00 PM, M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Adams
Art Unit 2164


SAM RIMELL
PRIMARY EXAMINER